

AMENDMENTS TO THE DRAWINGS

Attached hereto are twenty-two (22) sheets of corrected formal drawings that comply with the provisions of 37 C.F.R. § 1.84. It is respectfully requested that the corrected formal drawings be approved and made a part of the record of the above-identified application.

REPLACEMENT SHEET

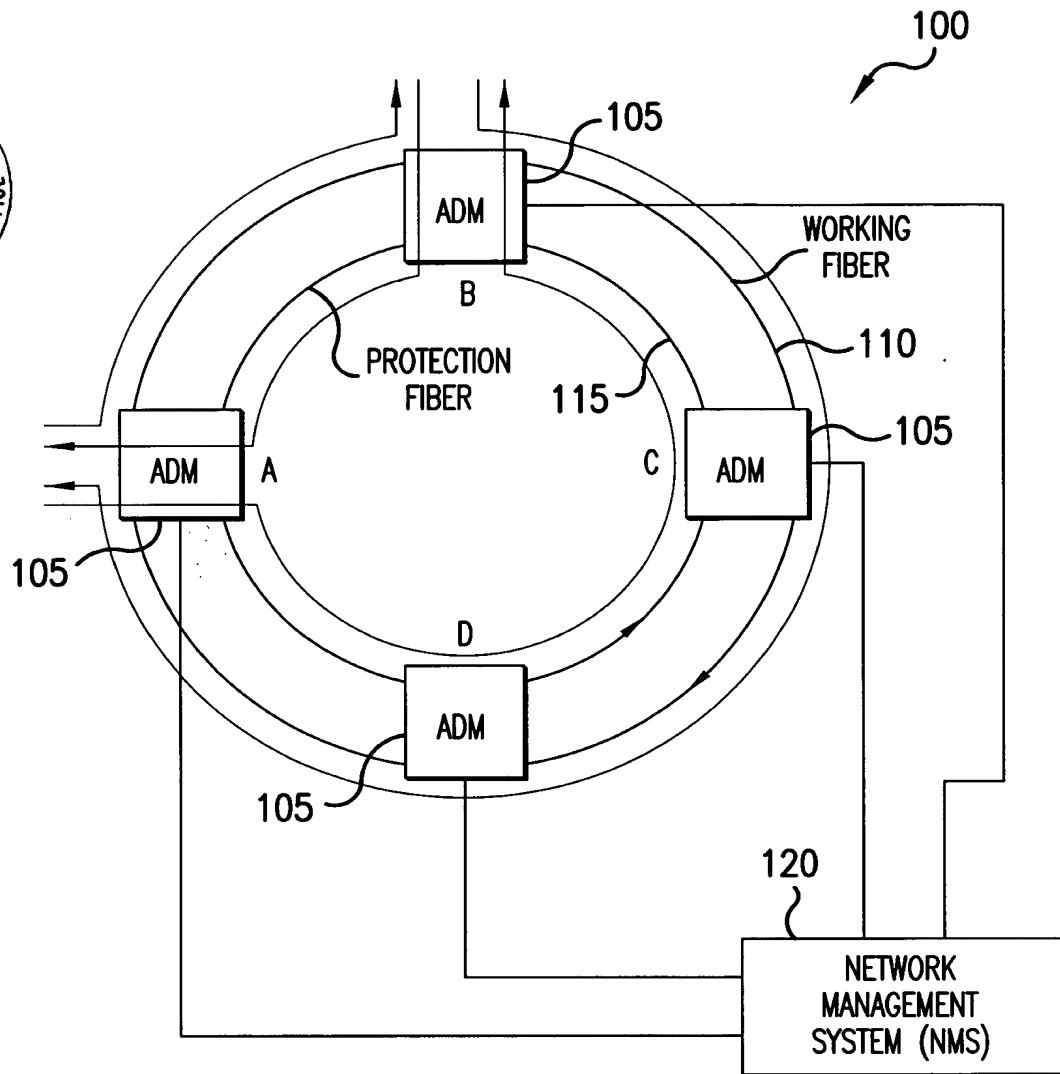


FIG.1
PRIOR ART

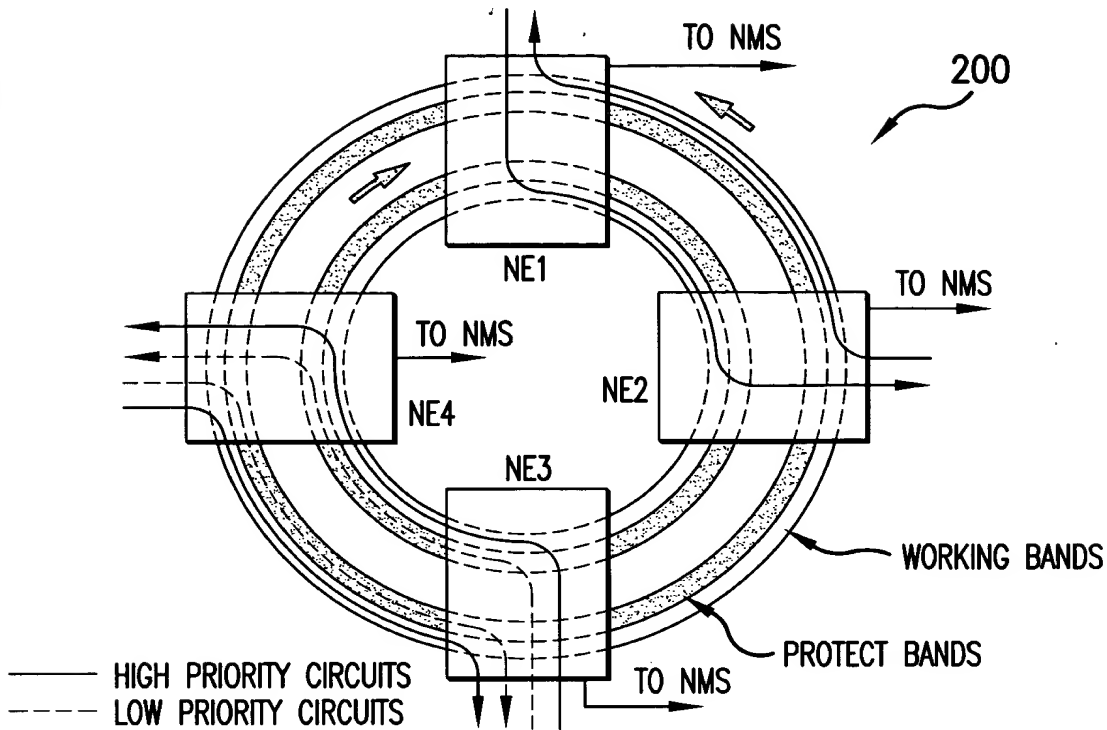


FIG. 2
PRIOR ART

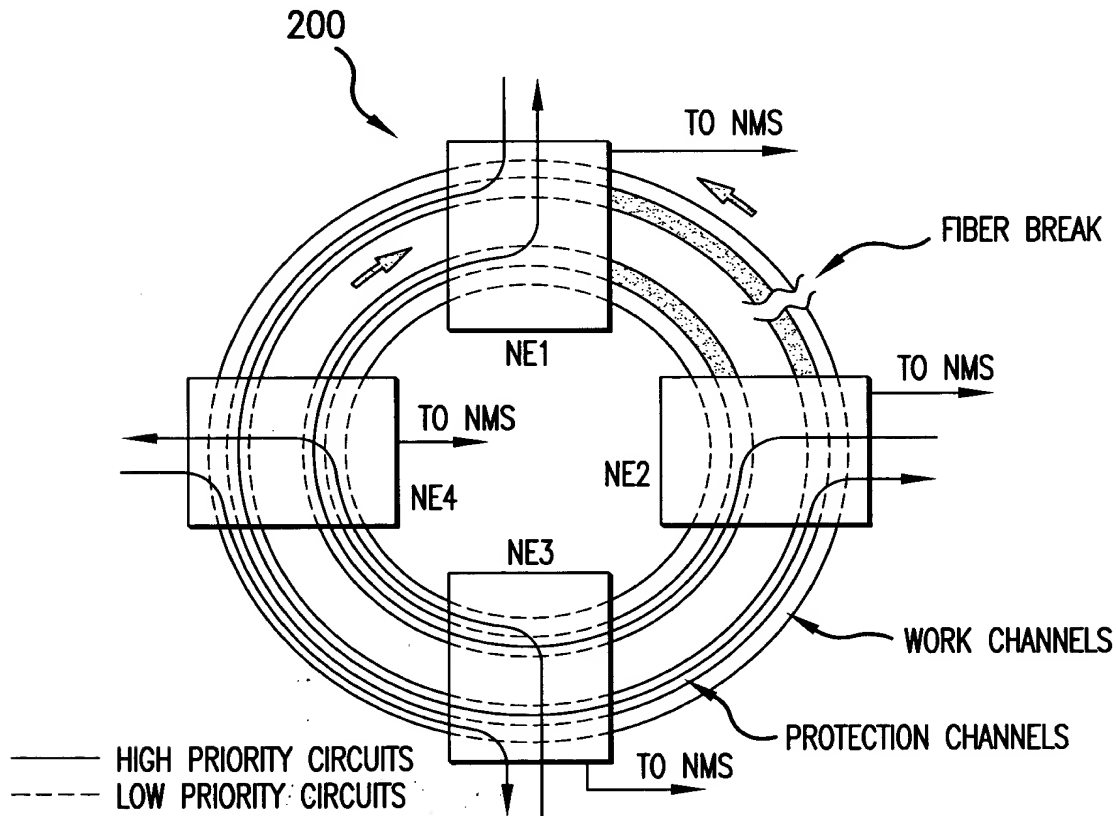


FIG. 3
PRIOR ART



400

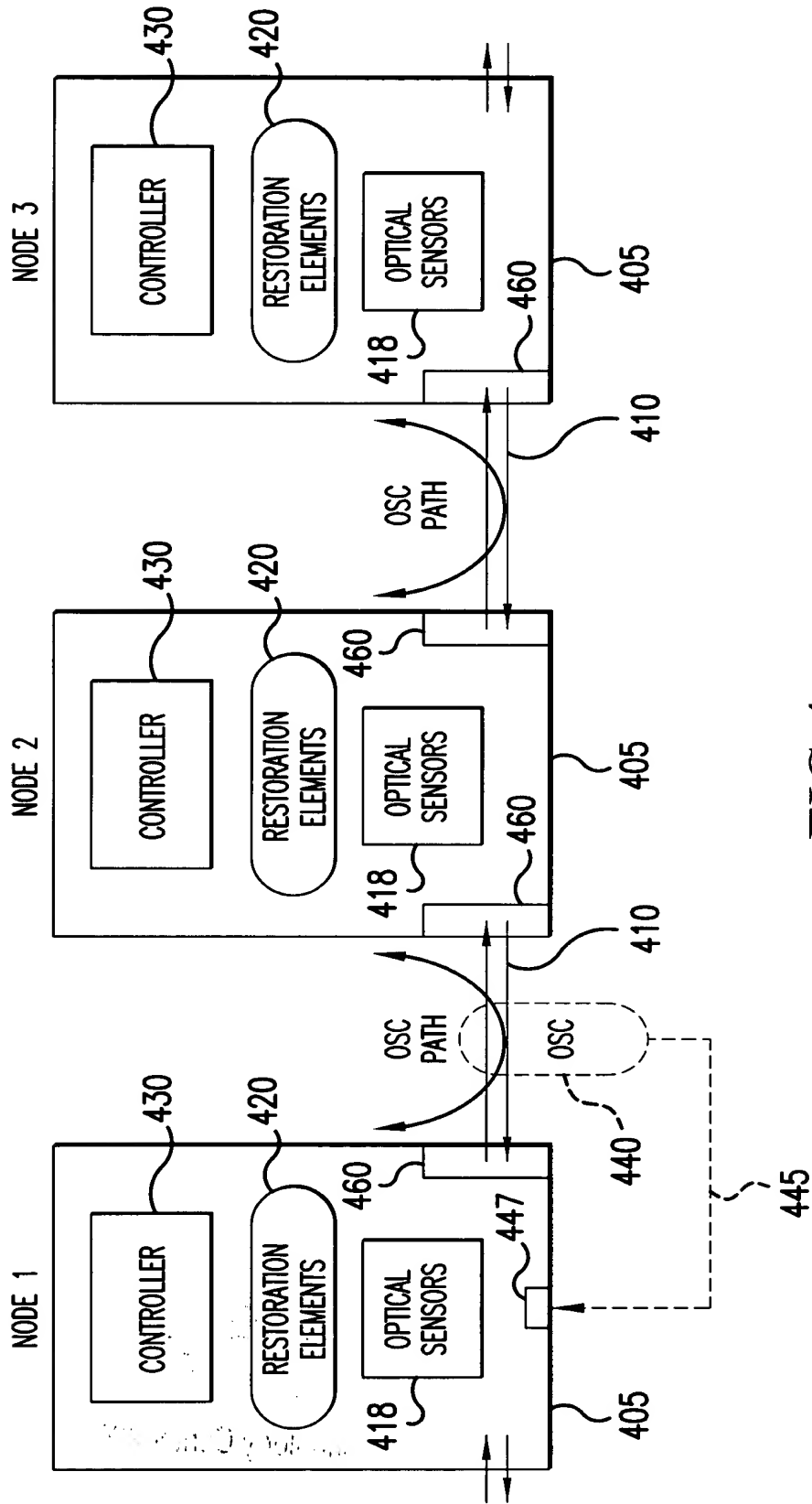


FIG.4

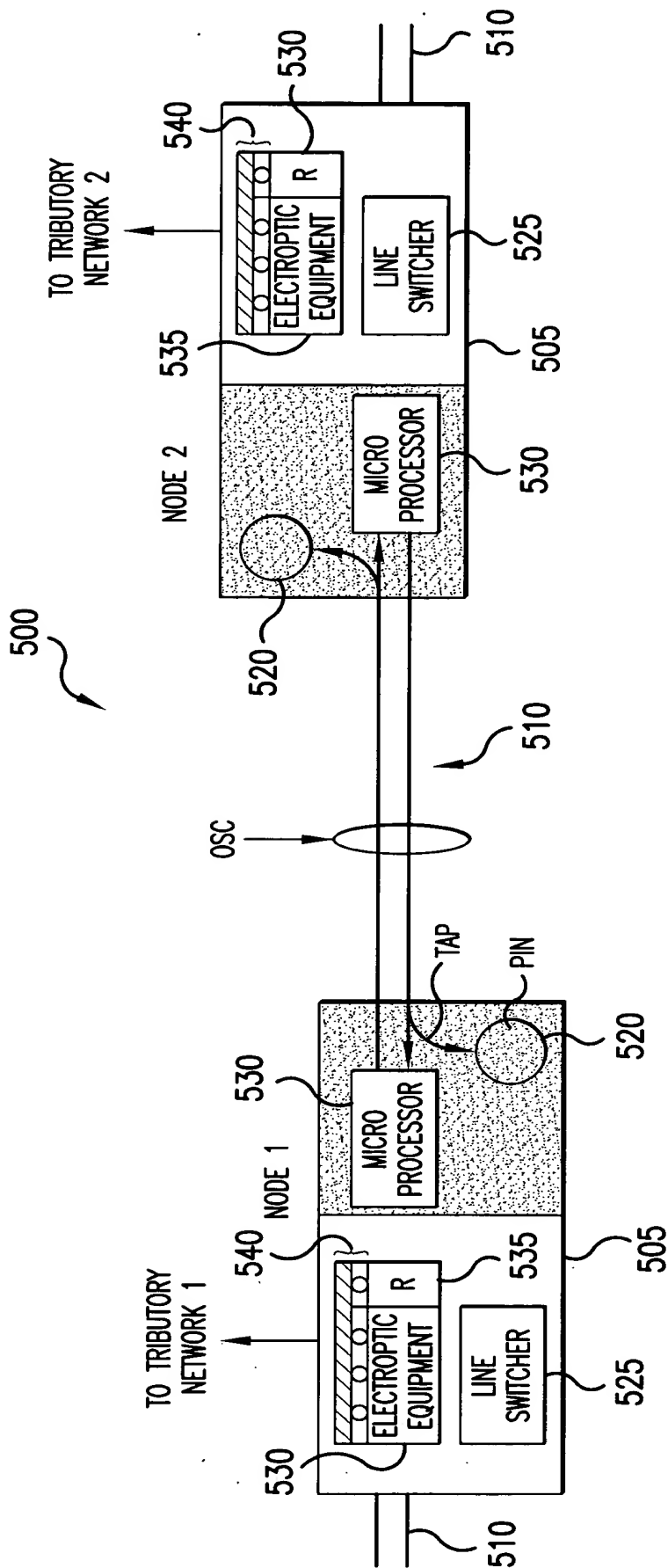


FIG.5

REPLACEMENT SHEET

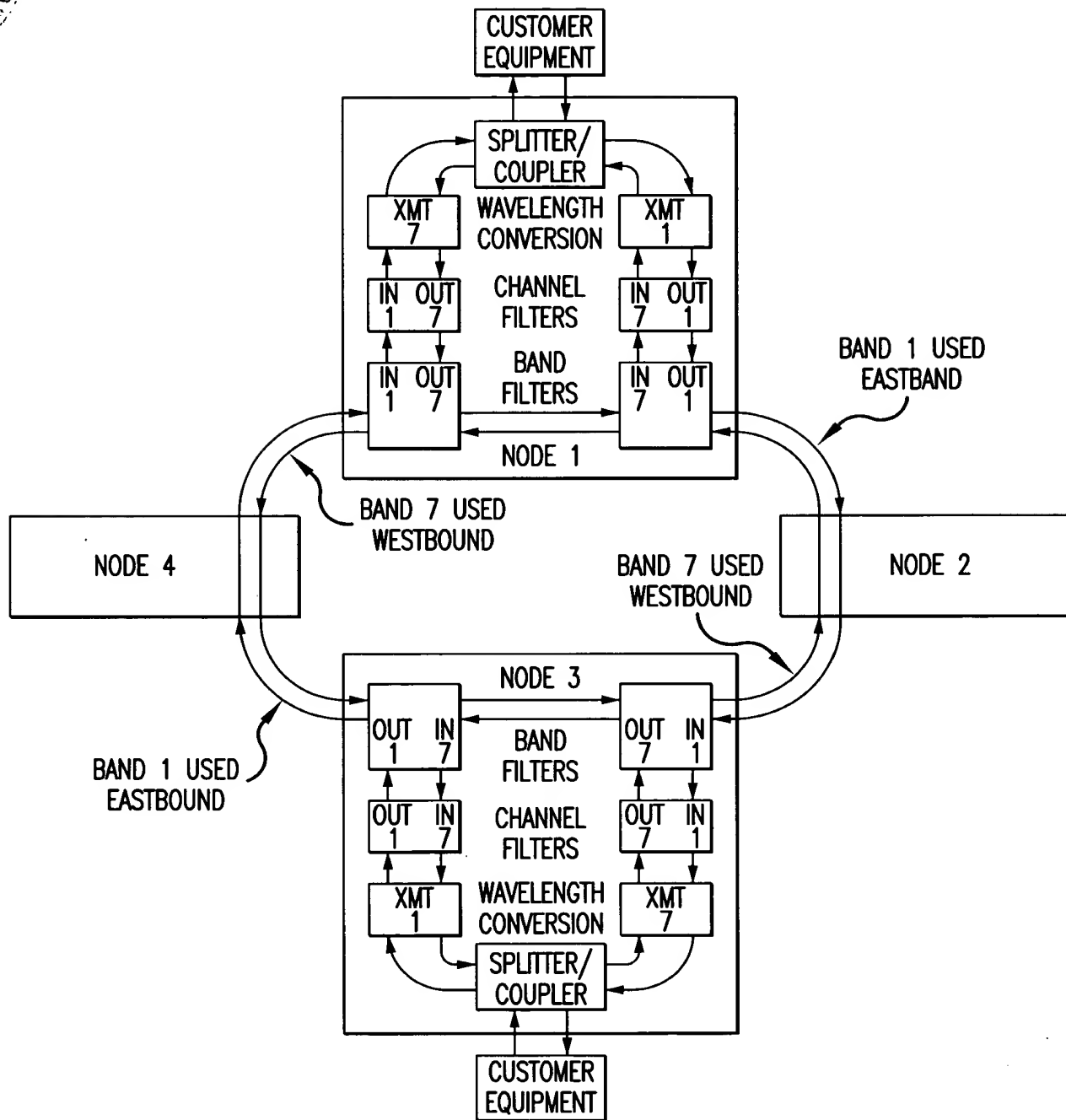
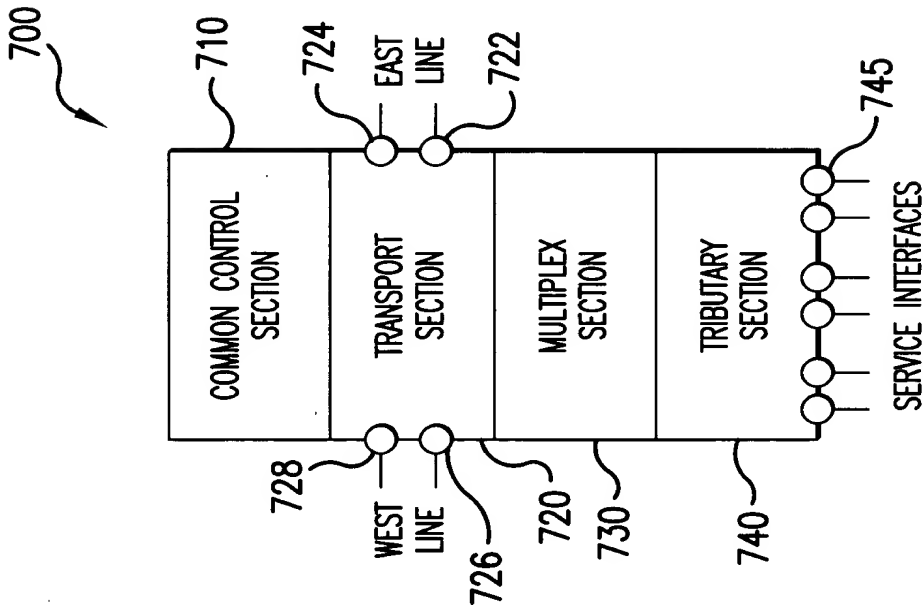


FIG. 6

REPLACEMENT SHEET



FUNCTION

CONFIGURATION DATABASE
OPERATIONS INTERFACES
INTER-NE COMMUNICATIONS

TRANSMISSION LINE TERMINATION
LINE AMPLIFICATION/ATTENUATION
LINE SWITCHING

OPTICAL SERVICE CHANNEL EXTRACTION

BAND MULTIPLEX/DEMULTIPLEX
CHANNEL MULTIPLEX/DEMULTIPLEX
EQUIPMENT PROTECTION

TRIBUTARY ACCESS
WAVELENGTH TRANSLATION
ADD/DROP SIGNAL ROUTING



FIG.7



REPLACEMENT SHEET

O I P E J C I T
JAN 0 5 2004
PATENT & TRADEMARK OFFICE

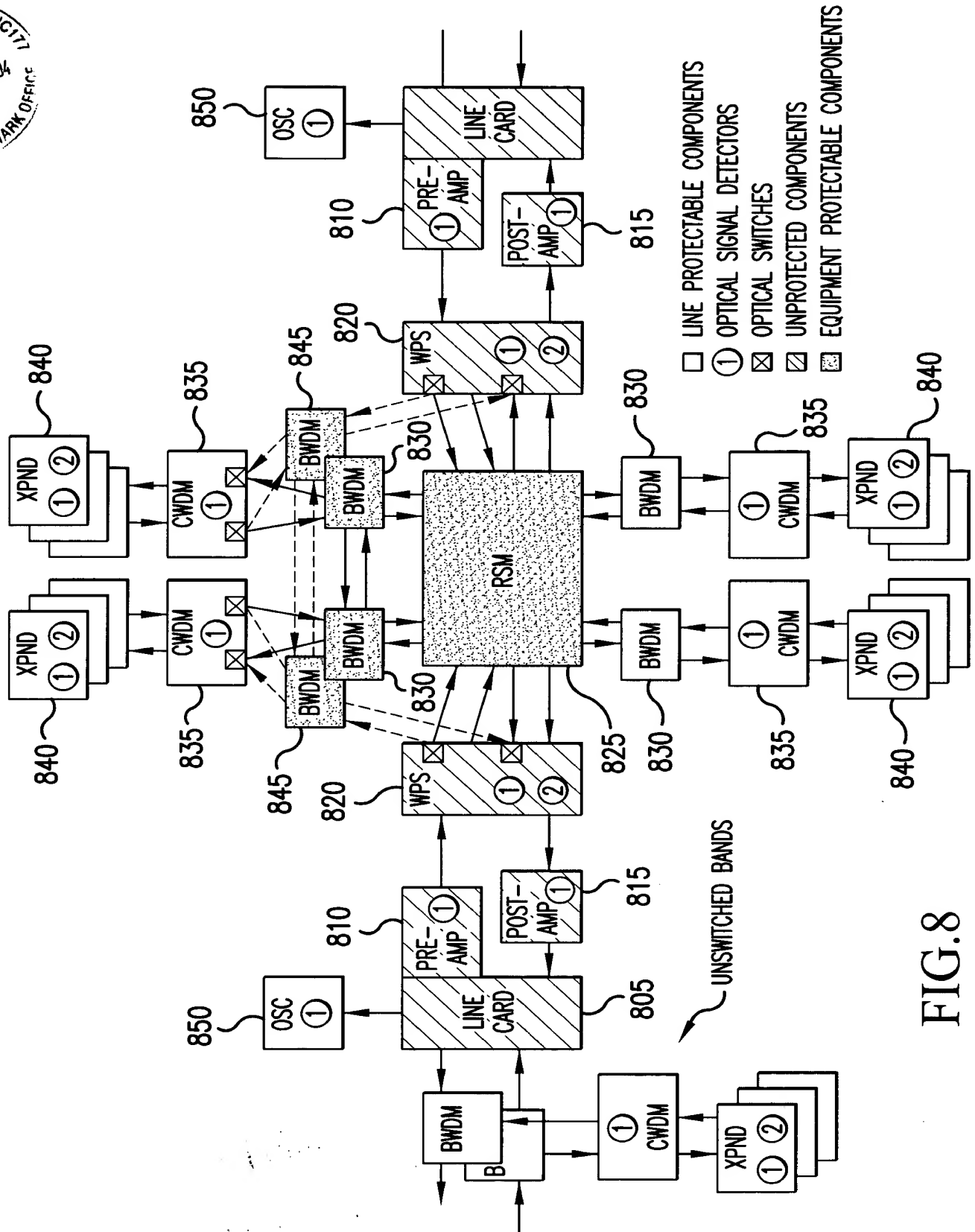


FIG. 8

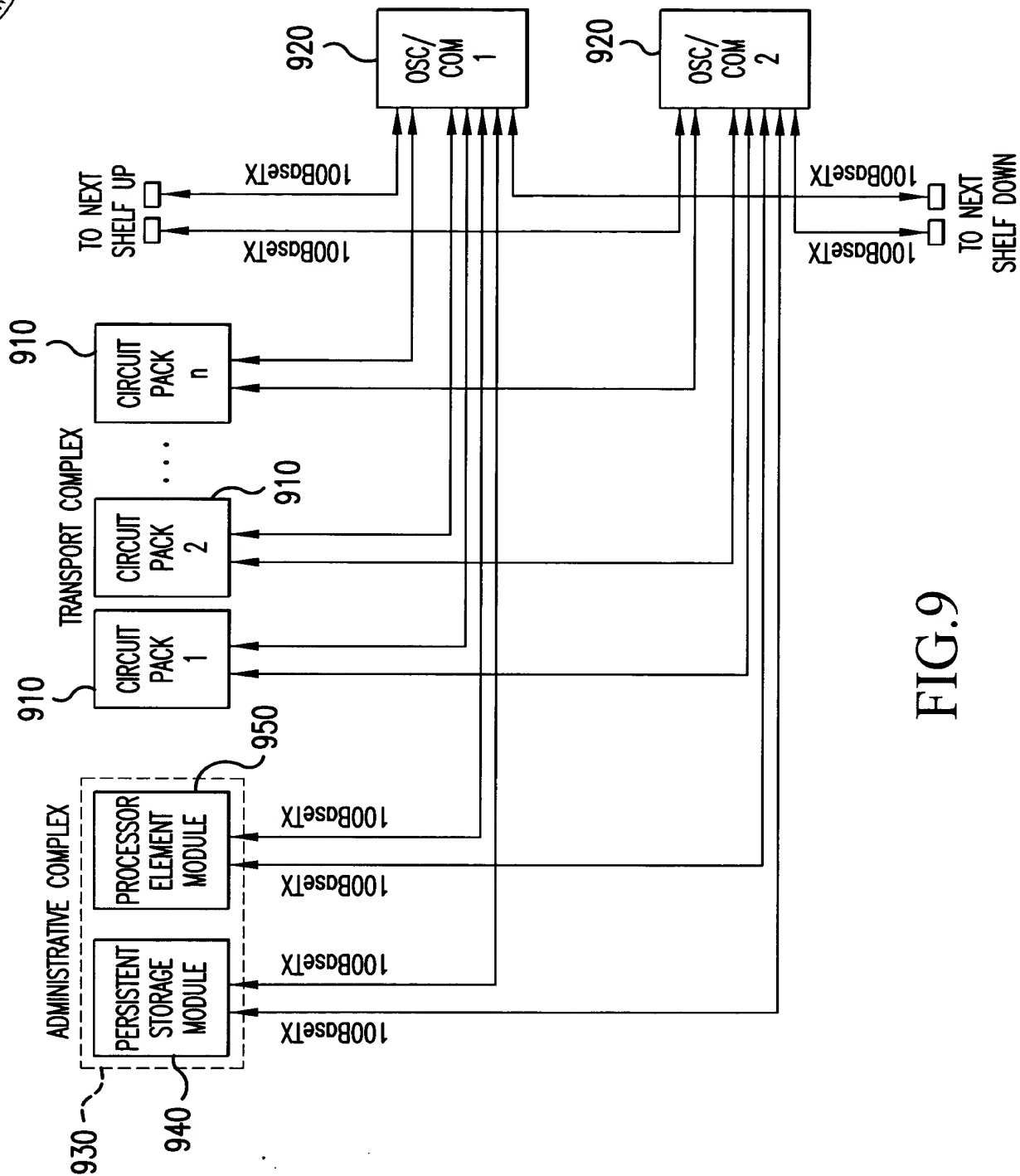
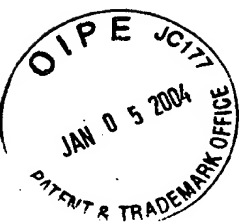


FIG.9

REPLACEMENT SHEET

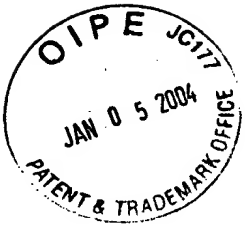


FIG.10A-1	FIG.10A-2
FIG.10A-3	FIG.10A-4

FIG.10A

REPLACEMENT SHEET

INTRA-NODE FIBER FAULT HANDLING

LEGEND:

- RS RING SWITCH
- DRS RING SWITCH DELAYED
- EQ EQUIPMENT SWITCH
- DEQ EQUIPMENT SWITCH DELAYED
- LOS LOSS OF SIGNAL AT RECEIVER(S)
- INDICATES A RESULTING ACTION THAT DOES NOT MATCH THE DESIRED ACTION FOR THE FAILURE

COMPONENT

CONNECTING FIBER LOCAL NODE EFFECT DOWNSTREAM NODE EFFECT

LINE/ POSTAMP	TO WPS	WORKING, AND PCA DROPS SEE LOS	IF LOCAL NODE ADDS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. OTHERWISE, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU CHANNELS DETECT LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.
	FROM WPS	NO IMPACT	DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU OR ADD CHANNELS REPORT LOS DOWNSTREAM.
	TO UNSWITCHED BNDM	LOCAL WORKING, UCA, AND PCA DROPS SEE LOS	IF LOCAL NODE ADDS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. OTHERWISE, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU CHANNELS DETECT LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.
	FROM UNSWITCHED BNDM	NO IMPACT	DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU OR ADD CHANNELS REPORT LOS DOWNSTREAM.
	TO/FROM OSC	DO NOT PROTECT AGAINST OSC FAILURE—USE AS RING SWITCH TRIGGER IF APPLICABLE.	
	TO NEIGHBOR	NO IMPACT	DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU OR ADD CHANNELS REPORT LOS DOWNSTREAM.

DESIRED PROTECTION ACTION					
OPEN NODE	PASSTHRU NODE	BSAME PASSTHRU	BOPPOSITE PASSTHRU	RSM GLASSTHRU	
RS	RS	RS	RS	RS	
RS	RS	RS	RS	RS	
RS	RS	RS	RS	RS	
RS	RS	RS	RS	RS	
RS	RS	RS	RS	RS	

FIG.10A-1

17691 U.S. PTO



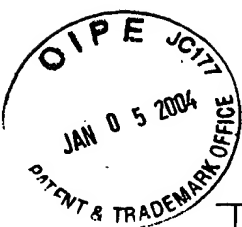
010504

REPLACEMENT SHEET

NODE CONFIGURATIONS - WCA WITHOUT UCA					
OPEN NODE	PASSTHRU NODE	BSAME PASSTHRU	BOPOSITE PASSTHRU	RSM GLASSTHRU	
OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	
OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	
N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	
DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	

NODE CONFIGURATIONS - WCA WITH UCA					
OPEN NODE	PASSTHRU NODE	BSAME PASSTHRU	BOPOSITE PASSTHRU	RSM GLASSTHRU	
N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	
OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	
OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	OSC OK WPS IN LOS RESULT: LOS	
DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	DOWNSTREAM OCS LOS LINE IN LOS ACTION: RS	

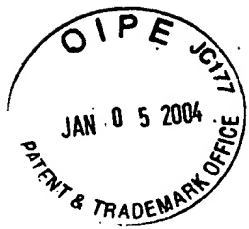
FIG.10A-2



REPLACEMENT SHEET

PREAMP	FROM NEIGHBOR	LOCAL WORKING, UCA, AND PCA DROPS SEE LOS	IF LOCAL NODE ADDS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. OTHERWISE, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU CHANNELS DETECT LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.	RS	RS	RS	RS	RS	RS
	TO WPS OR UNSWITCHED BAND	WORKING AND PCA DROPS SEE LOS	IF LOCAL NODE ADDS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. OTHERWISE, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU CHANNELS DETECT LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.	RS	RS	RS	RS	RS	RS
	FROM LINE CARD	WORKING AND PCA DROPS SEE LOS	IF LOCAL NODE ADDS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. OTHERWISE, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT. LOCAL PASSTHRU CHANNELS DETECT LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.	RS	RS	RS	RS	RS	RS
WPS	WORKING FROM RSM	NO IMPACT	LOCAL PASSTHRU AND ADD WORKING CHANNELS REPORT LOS DOWNSTREAM. PCA CHANNELS OK DOWNSTREAM. IF LOCAL NODE HAS PROTECT ACCESS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. IF NO PROTECT ACCESS TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS NO LIGHT.	EQ	EQ	EQ	EQ	EQ	EQ
	PROTECT FROM RSM (NO ACTION TAKEN SINCE PROTECT EQUIPMENT)	NO IMPACT	LOCAL PASSTHRU AND ADD PCA CHANNELS REPORT LOS DOWNSTREAM.	N/A	N/A	N/A	N/A	N/A	N/A
	WORKING FROM BACKUP BNDM	NO IMPACT	LOCAL PASSTHRU AND ADD WORKING CHANNELS REPORT LOS DOWNSTREAM. PCA CHANNELS OK DOWNSTREAM. IF LOCAL NODE HAS PROTECT ACCESS	N/A	N/A	N/A	N/A	N/A	N/A

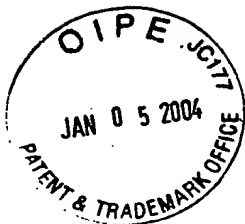
FIG.10A-3



REPLACEMENT SHEET

FIG.10B-1	FIG.10B-2
FIG.10B-3	FIG.10B-4

FIG.10B



REPLACEMENT SHEET

RSM	WORKING TO RSM	LOCAL WORKING CHANNEL DROPS SEE LOS	IF LOCAL NODE ADDS WORKING CHANNELS OR CARRIES PCA TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. LOCAL PASSTHRU WORKING CHANNELS SEE LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.	EQ	EQ	EQ	EQ	EQ	EQ
	PROTECT TO RSM (NO ACTION TAKEN SINCE PROTECT EQUIPMENT)	PROTECT ACCESS DROPS SEE LOS.	LOCAL DROP AND PASSTHRU PCA CHANNELS REPORT LOS	N/A	N/A	N/A	N/A	N/A	N/A
	WORKING FROM PRIMARY BNDM		LOCAL PASSTHRU AND ADD WORKING CHANNELS REPORT LOS DOWNSTREAM. PCA CHANNELS OK. IF LOCAL NODE HAS PCA DOWNSTREAM NEIGHBOR SEES LIGHT.	EQ	EQ	EQ	EQ	EQ	EQ
	PROTECT FROM BNDM (NO ACTION TAKEN SINCE PROTECT EQUIPMENT)		LOCAL ADD AND PASSTHRU PCA CHANNELS REPORT LOS	N/A	N/A	N/A	N/A	N/A	N/A
	WORKING TO PRIMARY BNDM	LOCAL WORKING CHANNEL DROPS SEE LOS	IF LOCAL NODE ADDS WORKING CHANNELS OR CARRIES PCA TRAFFIC, DOWNSTREAM NEIGHBOR WPS RECEIVE PIN DETECTS LIGHT. LOCAL PASSTHRU WORKING CHANNELS SEE LOS DOWNSTREAM. LOCAL ADD CHANNELS ARE OK DOWNSTREAM.	EQ	EQ	EQ	EQ	EQ	EQ

FIG.10B-1



REPLACEMENT SHEET

BNDM	PROTECT TO BNDM (NO ACTION TAKEN SINCE PROTECT EQUIPMENT)		LOCAL DROP AND PASSTHRU PCA CHANNELS REPORT LOS	N/A	N/A	N/A	N/A	N/A
	TO CNDM	LOCAL CHANNEL DROPS SEE LOS	NO IMPACT	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)
	FROM CNDM	NO IMPACT	CNDM ADD CHANNELS SEE DOWNSTREAM LOS. OTHER ADD CHANNELS AND PASSTHRU ARE OK.	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)	EQ (LOS IF UCA)
	TO BNDM (FROM RSM TOWARD PASSTHRU)	LOCAL CHANNEL DROPS DOWNSTREAM OF FAILURE SEE LOS	PASSTHRU WORKING CHANNELS SEE LOS DOWNSTREAM.	EQ	EQ	EQ	EQ	EQ
	FROM BNDM (FROM PASSTHRU TOWARD RSM)	NO IMPACT	PASSTHRU CHANNELS SEE LOS DOWNSTREAM. ADDED CHANNELS "UPSTREAM" OF THE FAILURE SEE LOS DOWNSTREAM. CHANNELS ADDED FOLLOWING FAILURE ARE OK.	EQ	EQ	EQ	EQ	EQ
	TO/FROM BNDM (PASSTHRU)	NO IMPACT	PASSTHRU CHANNELS SEE LOS DOWNSTREAM. ADDED CHANNELS ARE OK DOWNSTREAM.	N/A	EQ	N/A	N/A	N/A
WCI	TO CNDM	NO IMPACT		LOS	LOS	LOS	LOS	LOS
	FROM CNDM	LOCAL LOS		LOS	LOS	LOS	LOS	LOS

FIG.10B-3



REPLACEMENT SHEET

N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS
OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS	OSC OK LINE IN OK RESULT: LOS
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N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS
LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS	LOS

FIG.10B-4

REPLACEMENT SHEET

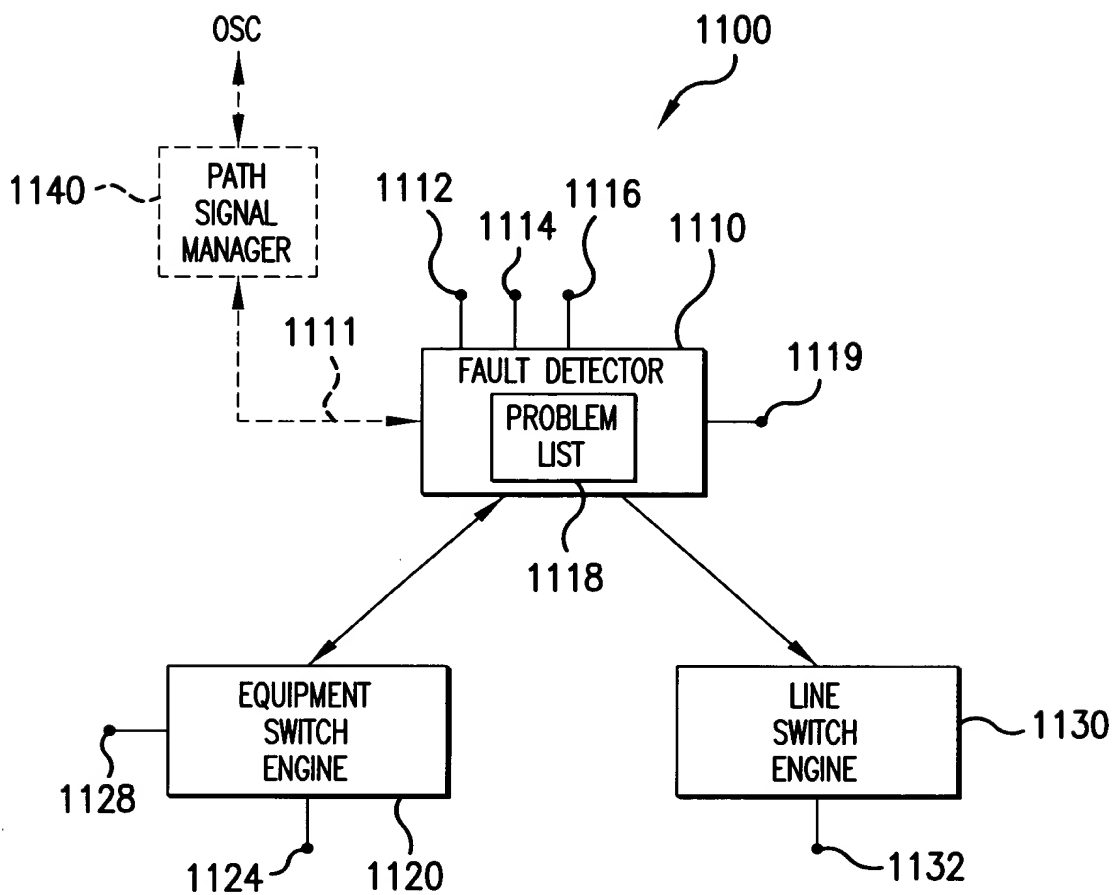


FIG.11

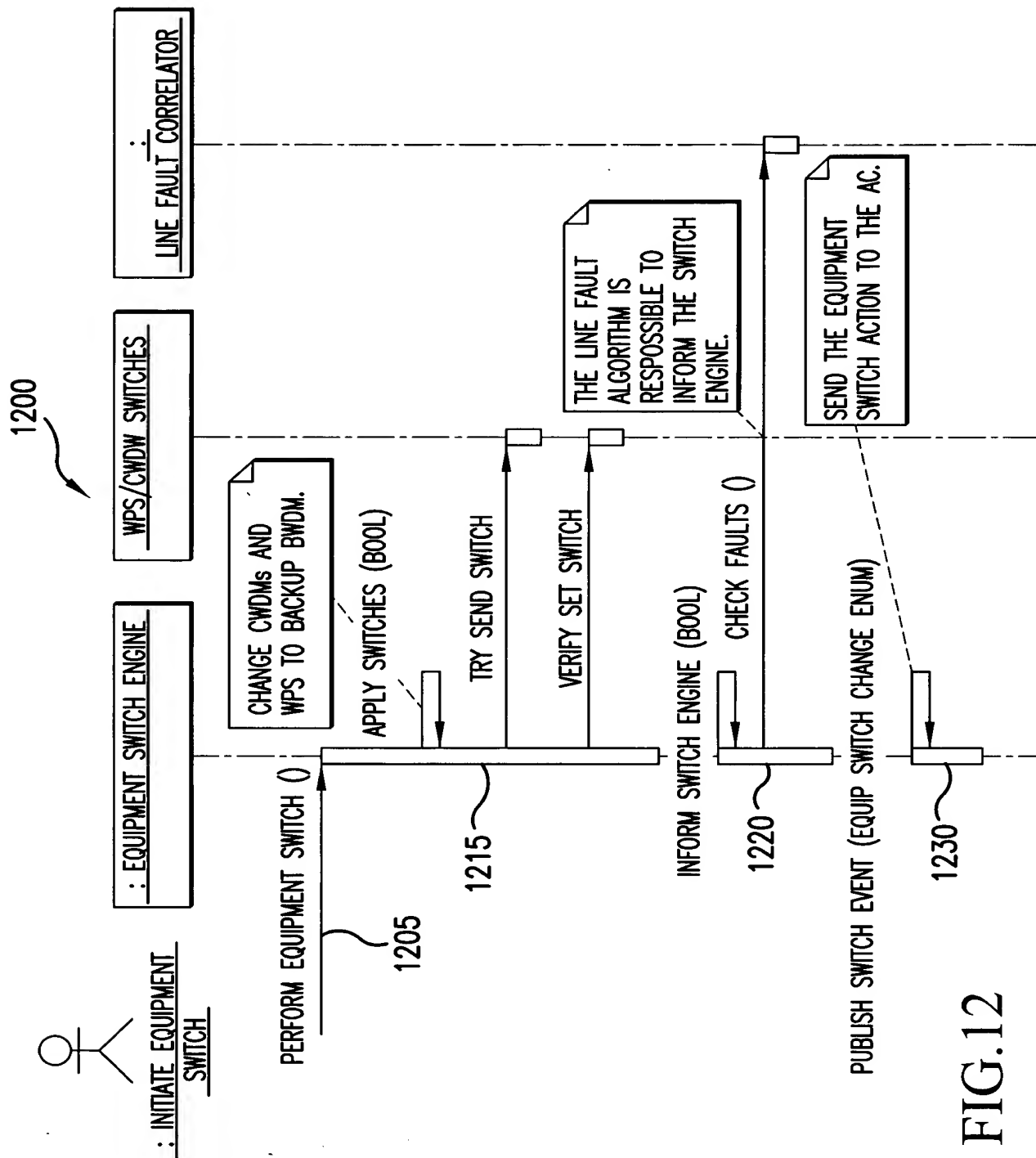


FIG.12

REPLACEMENT SHEET

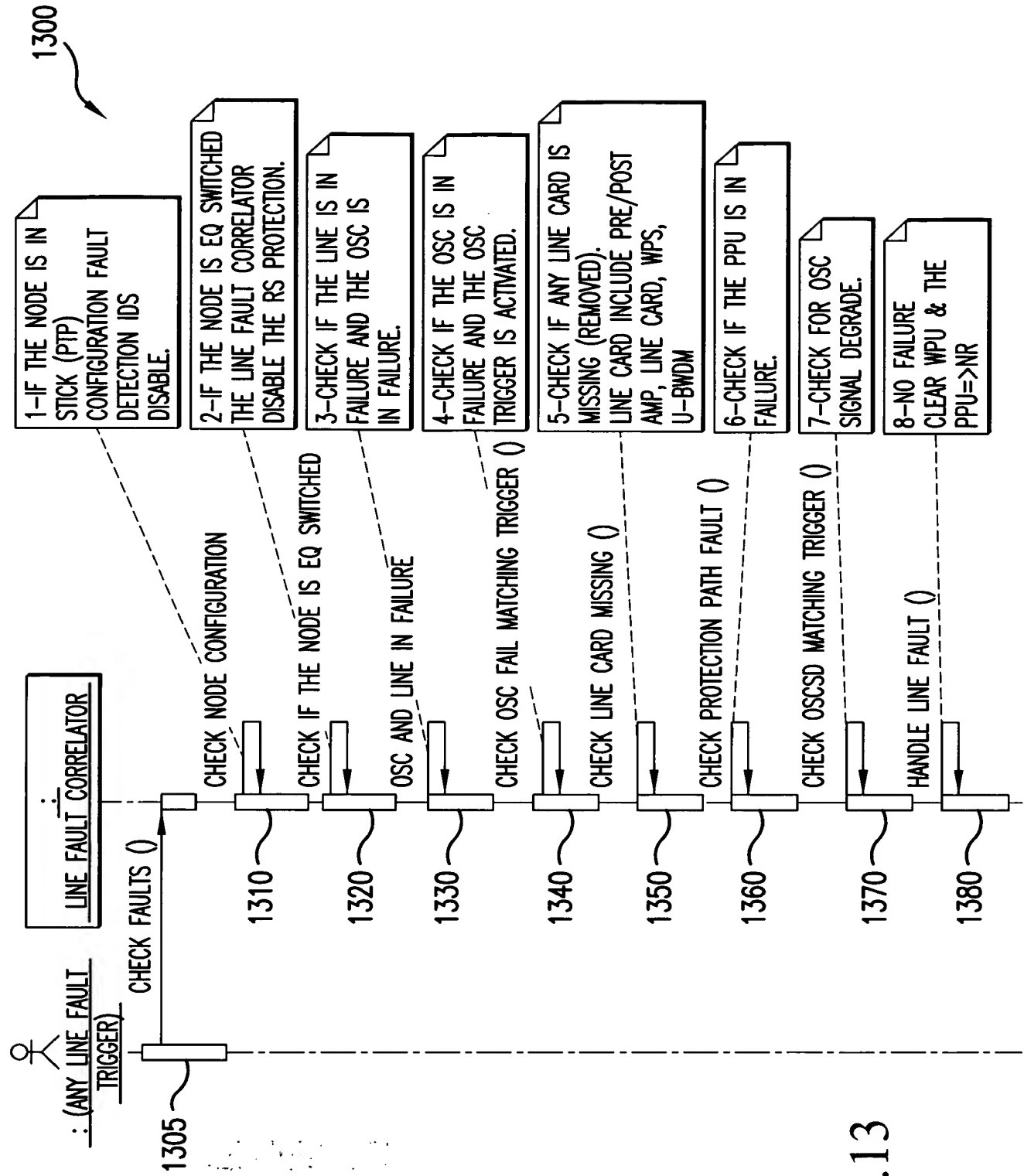


FIG.13

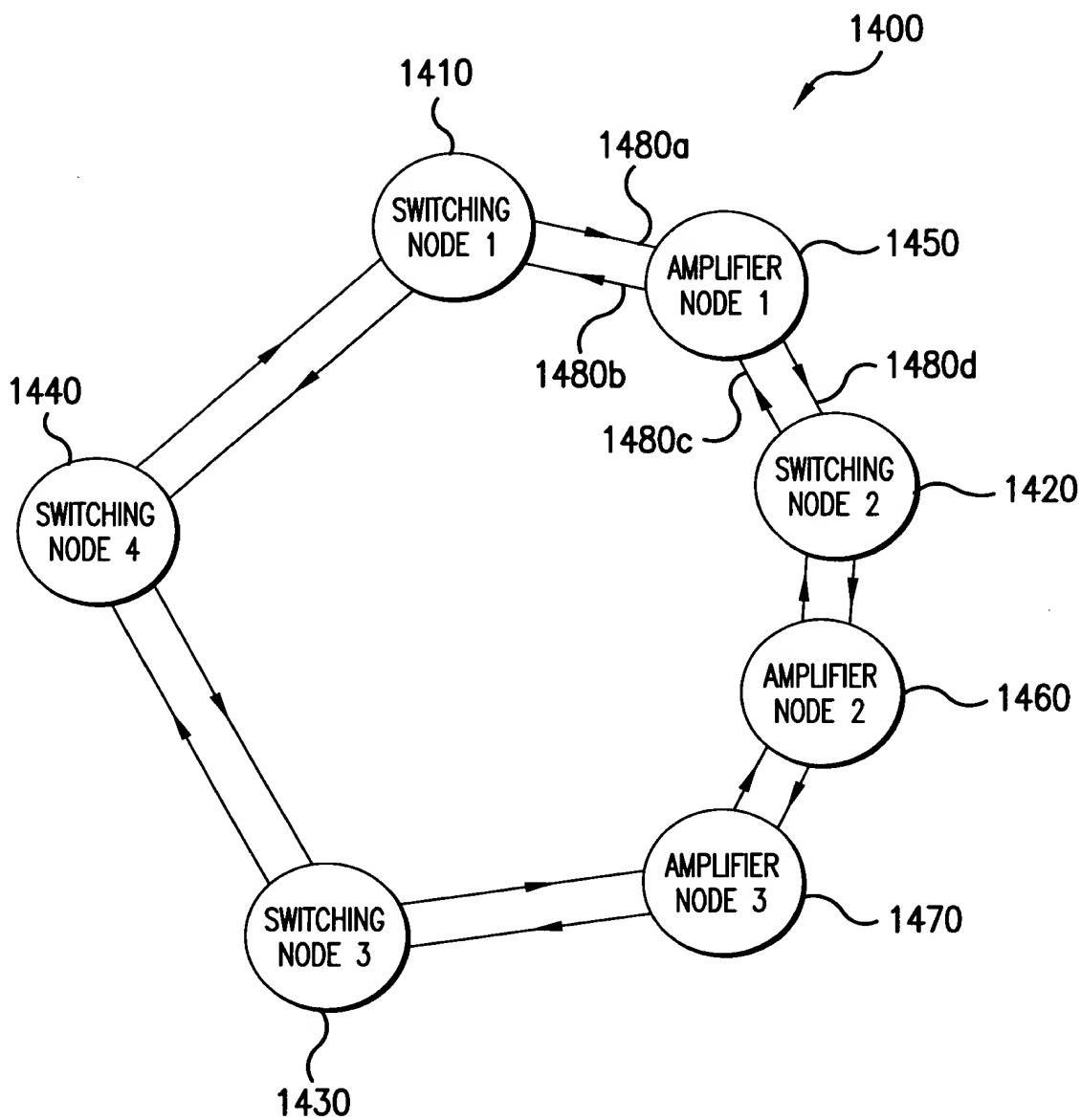


FIG.14